

# Claims

- [c1] 1. A method for controlling an engine in a vehicle having a motor operatively connected to the engine, the method comprising:
- determining when an engine shutdown is requested;
  - determining whether an engine position sensor correction factor is known;
  - discontinuing fuel to the engine if the engine position sensor correction factor is not known, and an engine shutdown is requested; and
  - employing the motor to spin the engine after fuel to the engine is discontinued, thereby facilitating determination of the engine position sensor correction factor.
- [c2] 2. The method of claim 1, wherein the motor spins the engine at an approximately constant speed after fuel to the engine is discontinued.
- [c3] 3. The method of claim 1, wherein the engine shutdown is requested by the controller.
- [c4] 4. The method of claim 1, wherein the engine shutdown is requested by a vehicle operator.

- [c5] 5. The method of claim 1, further comprising allowing the engine speed to decrease to zero after the engine position sensor correction factor is determined.
- [c6] 6. The method of claim 1, further comprising allowing the engine speed to decrease to zero after a predetermined time has passed.
- [c7] 7. The method of claim 1, the engine including a camshaft and a crankshaft, the vehicle including a battery operatively connected to the motor, the method further comprising:  
determining whether at least some conditions from a set of conditions are met prior to discontinuing fuel to the engine, the set of conditions including a battery temperature being at least a predetermined temperature, a battery voltage being at least a predetermined voltage, a battery discharge level being at least a predetermined discharge level, a crankshaft position sensor being valid, and a camshaft position sensor being valid.
- [c8] 8. A system for controlling an engine in a vehicle to facilitate determination of engine position sensor correction factors, the vehicle including a motor operatively connected to the engine, the system comprising:  
a sensor configured to cooperate with the engine to detect engine position; and

a controller in communication with the engine, the sensor, and the motor, the controller being configured to command an engine shutdown, determine whether the engine position sensor correction factors are known, discontinue fuel to the engine after engine shutdown is commanded and the engine position correction factors are not known, and command the motor to spin the engine after fuel to the engine is discontinued, thereby facilitating determination of the engine position sensor correction factors.

- [c9] 9. The system of claim 8, wherein the controller commands the motor to spin the engine at an approximately constant speed after fuel to the engine is discontinued.
- [c10] 10. The system of claim 8, wherein the controller is further configured to command engine shutdown during vehicle operation when the engine is not required.
- [c11] 11. The system of claim 8, wherein the controller is further configured to command engine shutdown when a vehicle operator turns a vehicle ignition switch to an off position.
- [c12] 12. The system of claim 8, wherein the controller is further configured to allow the engine speed to decrease to zero after the engine position sensor correction factors

are determined.

[c13] 13. The system of claim 8, wherein the controller is further configured to allow the engine speed to decrease to zero after a predetermined time has passed.

[c14] 14. The system of claim 8, the engine including a camshaft and a crankshaft, the vehicle further including a battery operatively connected to the motor, and wherein the controller is further configured to determine whether at least some conditions from a set of conditions are met prior to discontinuing fuel to the engine, the set of conditions including a battery temperature being at least a predetermined temperature, a battery voltage being at least a predetermined voltage, a battery discharge level being at least a predetermined discharge level, a crankshaft position sensor being valid, and a camshaft position sensor being valid.

[c15] 15. The system of claim 14, wherein the sensor configured to cooperate with the engine to detect engine position is the crankshaft position sensor.

[c16] 16. A vehicle having a system for controlling an engine to facilitate determination of engine position sensor correction factors, the vehicle comprising:  
an engine;

a motor operatively connected to the engine;  
a sensor configured to cooperate with the engine to detect engine position; and  
a controller in communication with the engine, the sensor, and the motor, the controller being configured to command an engine shutdown, determine whether the engine position sensor correction factors are known, discontinue fuel to the engine after engine shutdown is commanded and the engine position correction factors are not known, and command the motor to spin the engine after fuel to the engine is discontinued, thereby facilitating determination of the engine position sensor correction factors.

[c17] 17. The vehicle of claim 16, wherein the controller commands the motor to spin the engine at an approximately constant speed after fuel to the engine is discontinued.

[c18] 18. The vehicle of claim 16, wherein the controller is further configured to command engine shutdown during vehicle operation when the engine is not required.

[c19] 19. The vehicle of claim 16, wherein the controller is further configured to command engine shutdown when a vehicle operator turns a vehicle ignition switch to an off position.

[c20] 20. The vehicle of claim 16, wherein the controller is further configured to allow the engine speed to decrease to zero after the engine position sensor correction factors are determined.

[c21] 21. The vehicle of claim 16, wherein the controller is further configured to allow the engine speed to decrease to zero after a predetermined time has passed.

[c22] 22. The vehicle of claim 16, the engine including a camshaft and a crankshaft, the vehicle further comprising:  
a battery operatively connected to the motor; and  
wherein the controller is further configured to determine whether at least some conditions from a set of conditions are met prior to discontinuing fuel to the engine, the set of conditions including a battery temperature being at least a predetermined temperature, a battery voltage being at least a predetermined voltage, a battery discharge level being at least a predetermined discharge level, a crankshaft position sensor being valid, and a camshaft position sensor being valid.

[c23] 23. The vehicle of claim 16, wherein the sensor configured to cooperate with the engine to detect engine position is the crankshaft position sensor.